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PROPOSED NACA PRESS RELEASE

Dr. Hugh L. Dryden, Director of the National Advisory Committee for Aeronautics, announced today that the first research paper produced from data obtained in their previously publicized upper atmosphere research program has been released for distribution to sources interested in U.S. Aeronautical Science. This paper concerns itself with data obtained in the Western European area through the utilization of Lockheed's newly developed U-2 aircraft which enabled the collection of data at altitudes between 50,000 and 55,000 feet. The main objective of NACA's program has been the gathering of data on turbulence associated with the jet stream, convective clouds, wind structure, temperatures at jet levels, clear air turbulence, weather shear, etc.

This initial report reveals that

Dr. Dryden indicated that the research program which they have inaugurated was originally recommended by the Gust Loads Research Panel of the NACA's Technical Sub-committee on Aircraft Loads and that the program would not have been possible without the ability of

American scientific efforts to join forces. The cooperation already evident in all theatres on the part of the Air Weather Service has been of high order. Research which we are gaining on a global basis will, Dr. Dryden continued, make it reasonable for tomorrow's air traveler to expect degrees of speed, safety and comfort beyond the capabilities of today's air transport.

The AWS has a very strong interest in the program and the data it is providing. The instrumentation being used is the latest which has been developed for weather and basic meteorological data gathering. In addition to the NACA equipment being utilized the program has used to advantage many newly developed instruments furnished by the Wright Air Development Center of the USAF. It has been NACA's responsibility to exploit and disseminate the scientific results obtained. Photographs of the assembled instrumentation were recently furnished by NACA to demonstrate the complexity of the assembly and to further demonstrate the many areas of upper atmosphere which are being studied. An example is the new turbulence recorder developed by WADC Model HB which continuously records the indicated air speed, pressure altitude and normal acceleration on arc sensitized paper. The record from this instrument is immediately available for inspection after flight of the aircraft.

The NACA developed VGH recorder indicates two pressure sensitive elements for continuous measurement of air speed and pressure altitude, a galvanometer for measuring the output of a remote acceleration transmitter, and a timing mechanism. Also installed is a sensitive air speed recorder which is similar to the VGH recorder except that a higher sensitivity factor for air speed is obtained by use of multiple mirrors on the air speed pressure element. The NACA, further, has provided a VG recorder that traces the upper envelope (or peak values) of accelerations as a function of air speed on a smoked glass plate which is ready for inspection immediately after completion of a flight. Finally, the NACA has installed a turn meter oriented to record the rate of pitch of the aircraft; the meter records optically on a 50 foot roll of sensitized paper.

Dr. Dryden further stated that not only does the U-2 provide NACA with a platform from which badly needed high altitude meteorological data can be secured, but it also gives the opportunity to test certain new light-weight types of meteorological instrumentation. The tests, furthermore, have had the advantage of having been introduced under operational environments. Items recently introduced to the program by WADC are an infrared hygrometer for accurate measurement of dew-point, an improved vortex temperature probe, a vortex psychrometer for measuring free air temperature and relative humidity, a means of measuring visibility, and improved turbulence measuring and recording equipment.

The HACA program, under way since 9 May 1956 in various parts of the world, is designed to satisfy not only its own requirements but those of the ANS as well. Much of the data gathered is being forwarded to the Geophysical Research Directorate of ANDC to assist them in developing methods of forecasting meteorological phenomena which are important to high altitude flight. Much of the data, however, has been processed and analyzed by HACA to form the basis for statistical studies of turbulence. Military operations are very sensitive to meteorological phenomena. For proper diagnosis and prognosis of these phenomena, high altitude weather aircraft observations are essential.